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ABSTRACT

This paper describes the structure of curriculum development, including scope, sequence, grouping for instruction, and providing for individual differences. It first examines the characteristics of a separate subjects curriculum and the characteristics of a correlated curriculum. Next it examines scope, which is defined as the sum total of all the knowledge objectives emphasized in the class. Scope includes time factors and student input. Also discussed is the topic of sequence, or the order in which units should be taught. Sequence may be logical or psychological. A curriculum with a psychological sequence may involve a learning center philosophy of instruction; a student-teacher cooperative plan of objectives, learning activities, and appraisal procedures; or an individualized reading plan. Teachers, supervisors, and administrators need to determine which type of outcome--knowledge, skills, or attitudes--should receive major emphasis in teaching-learning situations. Ways in which teachers can provide for individual student differences, and methods of student grouping, are considered. Finally, magnet schools, education by choice, and the voucher system are discussed. (SH)

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DESIGNING THE CURRICULUM

Dr. Marlow Ediger

To design a quality curriculum can be a highly worthwhile endeavor. A curriculum needs to possess structure. The structure may consist of the basics or essentials or it can be quite open-ended. There are numerous ingredients then that need to go into curriculum development.

Separate Subjects versus Relationship of Academic Disciplines

A separate subjects curriculum emphasizes the teaching of specific units of study on history only, or any other singular social science discipline. Or in the sciences, the teacher could teach units on biology only, physics only, or any other academic division of subject matter content. Specific units could also be taught on particular academic disciplines within literature, language, and grammar, among others.

Teaching a unit of study to students emphasizing a particular academic solely, has its definite advantages. A teacher might then stress students acquiring facts, concepts, and generalizations in depth. To emphasize depth instruction requires time for these teaching-learning situations. A variety of learning activities are needed to guide learners to acquire each facet of worthwhile subject matter within an academic discipline. Depth teaching is always to be preferred as compared to survey procedures. With survey teaching many facts, concepts, and generalizations are taught within a selected interval of time. With depth teaching, fewer facts, concepts, and generalizations

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are taught within that same interval of time. For each fact, each concept, and each generalization, variety in sequential learning opportunities are necessary. Pertaining to depth teaching in Theodore Sizer's Coalition of Essential Schools, Watkins[1] wrote:

> In what Mr. Sizer calls his "fantasy school," teachers would teach fewer subjects than they do now and teach them in greater depth. Students would be active learners--"student as worker," as Mr. Sizer puts it--and teachers would be coaches, not lecturers who deliver information.
>
> In addition, teachers would be responsible for no more than 80 students, rather than 175 or so, a number that Mr. Sizer says is common now. Only after students demonstrated mastery of the knowledge and skills of the school's curriculum would diplomas be awarded.
>
> "Good schools accept the convenience that no two kids are alike," says Mr. Sizer, elaborating on his ideal. "Seven kids may get the answer to a problem wrong, but it may be for seven different reasons."
>
> To understand those reasons, "you have to know each student well enough to know why in each case," he says. "Kids learn in different ways. They are interested in different things. So you can't teach in one way.
>
> Mr. Sizer maintains that reducing the total number of subjects that students take in school is critical.
>
> "To get kids in the habit of using their minds means giving them important questings and lots of time to struggle with them," he says. "One issue can't be knocked off in one day--tomorrow you will read the Bill of Rights and Friday there will be a test."
>
> In a coalition school, he says, "you cover a lot less, but you do it thoroughly."
>
> "Less is more."
>
> "This is all common sense," he adds. "It is nothing bizarre. What is bizarre is the way we run schools now."
>
> The coalition's founder acknowledges that he was marked as an educational reformer in childhood.
>
> "I grew up with parents who preached the word that you should leave the planet a better place than you found it," he says.

There are advantages in having and implementing a separate subjects curriculum. These include

1. students becoming thoroughly familiar and highly knowledgeable about each single academic discipline.

2. deeper understanding of the discipline providing content for instruction.

3. sequence coming from one academic discipline without interference from other disciplines in a more correlated, fused, or integrated approach.

4. breadth of subject matter incorporating a single academic discipline making it possible for students to understand scope of content more adequately.

5. opportunities for students utilizing methods and procedures of acquiring information as emphasized by academicians in their academic areas of specialty.

If a teacher teaches a specific academic discipline only, such as in departmentalization plans of grouping students, he/she will tend to have had a strong academic background on the college/university level of undergraduate and graduate course work in content presently being taught.

Within each academic discipline, a logical sequence follows. For example, in a historical unit of study being taught, chronology in time is important for students to understand. A definite order in events occurred. The order or sequence needs emphasis. To improve understanding of an interval of time might well mean to have students attach meaning to subject matter being taught.

Somewhat toward the other end of the continuum, academic disciplines may be related in teaching-learning situations. A correlated curriculum tends to relate two academic areas. For example, when history is taught such as early explorers in the age of exploration, the regions (geography) explored could also be pinpointed on a map or globe. Fewer separate academic disciplines then need to be taught. Educational psychologists have long advocated that students perceive knowledge as being related. Increased retention of subject matter is then a possibility.

Further relationships of subject matter may be emphasized with the fused curriculum. Here, as an example, diverse social science disciplines such as history, geography, political science, economics, anthropology, and sociology may well be brought into a single unit of study. Thus in any nation being studied, the teacher can assist students to study

(a) its history.
(b) the geographical setting.
(c) kinds and types of government (political science) in evidence.
(d) goods and services (economics) produced.
(e) the cultural arena (anthropology and sociology).

To stress the fused curriculum, students need to perceive the relationship of all these social science disciplines. With a fused curriculum, the teacher needs to relate diverse academic disciplines into a unity or oneness. Each discipline being taught separately is definitely not stressed. Rather, students are assisted to relate, not isolate, subject matter components. Pertaining to the fused (also called the broad-fields curriculum, Shepherd and Ragan[2] wrote:

> The curriculum areas of language arts and social studies were developed within this organizational pattern, and they characterize this type. The broad-fields or fusion pattern accepted the subjects of the correlated pattern, but adjusted the scope and sequence to achieve a greater integration of learning experiences. The classroom schedule had longer periods of time; transfer of learning was encouraged and rewarded within these longer blocks of study; and the method called "unit teaching" was developed. The units were subject-centered, but were planned to related skills, knowledges, and appreciations within these larger areas of study. This pattern also added emphasis to the importance of pupil involvement, interest, and motivation as a positive factor in pupil achievement and curriculum planning.
>
> An excellent example of the broad-fields type of organization is found in the unified language arts program. Instead of scheduling reading, writing, spelling, listening, and other separate subjects for approximately ten minutes each, a longer time (perhaps fifty minutes) is scheduled for

language arts. Another exaqmple is found in the social studies. Instead of scheduling history, geography, economics, and other separate subjects for a brief period each, a longer period is set aside for a unified social studies program.

Critics of the broad-fields or fusion pattern for organizing the curriculum suggested that it was still too subject-centered and therefore did not provide for a fully integrated and interrelated learning experience. According to its critics, if this much adjustment in scope and sequence is good, why maintain a subject centered organization at all?

The integrated curriculum goes one step further than the fused curriculum. For example, science, mathematics, the humanities, art, and music are brought into the social studies curriculum as it is good to do so and guides students to achieve more optimally. The integrated curriculum is not emphasized for the sake of content integration, but rather as it increases student opportunities to secure increased meaning from subject matter that is perceived as being related.

Scope in the Curriculum

What should be taught in any instructional unit of study? The objectives of instruction should indicate breadth of content taught for a single lesson or an entire unit. The teacher could focus on knowledge objectives of instruction. The sum total of all the knowledge objectives emphasized would stress <u>scope</u> in the curriculum. A narrower or broader scope can be emphasized. Thus in science instruction, major emphasis could be placed upon zoology as a single curriculum area. The scope could be broadened to include botany. Additional academic disciplines could also be stressed. The scope then increasingly becomes broader. State mandated objectives, district-wide instructional management systems, approved curriculum guides and resource units might

also determine the scope of a science course. Or it could be teacher judgment solely, that determines breadth of content in science instruction.

Time factors might also be involved in determining scope in the curriculum. If ample time is available to teach a specific curriculum area, the scope may well be broadened. Conversely, limited available time for teaching a subject matter area might well narrow the scope of the curriculum.

If student input is involved in curriculum development, much emphasis may then be placed upon student interests. Through learner questions raised in class or the use of teacher-pupil planning of learning opportunities, the student is assisting to determine the scope of the curriculum.

More specifically, the following procedures would answer the question of what is to be taught or the scope of the curriculum:

1. problems identified in an ongoing unit by students. Each problem area needs a committee to develop solutions. The total number of problems equals the scope of the curriculum emphasizing a problem solving philosophy.
2. tasks at diverse learning centers. At each center, four to five tasks may be typed on a card. An adequate number of centers with their respective stations is in evidence so that any student may select sequential tasks to pursue. Those not deemed purposeful, a student can omit.
3. subject matter in textbooks and workbooks selected by the classroom teacher could answer the question of <u>what</u> will be taught. The scope of the curriculum is reflected within the facts, concepts, and generalizations contained in the adopted textbook(s).
4. sequential lesson plans developed by the teacher. Here, the classroom teacher creatively develops each lesson plan. Learning activities within each plan may be based upon the adopted textbook series and related workbooks. Or, no textbooks/workbooks are utilized. In either situation, other learning activities, than textbooks and workbooks, would predominate.

5. the basics, in any academic area taught, being identified by teachers, administrators, and curriculum directors.

Pertaining to student input into the curriculum when determining scope, Ediger[3] wrote about the following approaches:

1. discussing with pupils which units of study they wish to pursue.
2. having pupils assist in determing which problem areas to pursue within a unit of study introduced by the teacher.
3. listening to comments made by pupils as to what captures their interests; objectives, learning experiences, and evaluation procedures may be selected and evaluated based on student comments.
4. learning centers may be developed cooperatively by pupils with teacher leadership. The learning activities contained at each center would then largely determine what pupils are to learn.

Sequence in the Curriculum

When should selected facts, concepts, and generalizations be taught in any unit of study? Answering the question of when stresses sequence. Any specific unit in science, should it be taught on the primary, intermediate, junior or senior high school levels? Within, for example, the primary level, should the science unit be taught on the kindergarten, first, second, or third grade level? Further questions pertaining to sequence would state if the science unit should be taught first, second, third, fourth, and so on, within a particular grade level. Within the science unit, should listed objective one be stressed first, second, third, or higher ordinal levels within the hierarchy? To achieve listed objective number one, which learning activity should come number one, two, three, four, and so on? The reader will notice there are many problems involved in determining sequence to the curriculum.

Quality sequence is important in teaching since learners taught need to achieve optimally as continually as possible. When the

objectives and learning opportunities move forward gradually in complexity, students have a better chance to achieve and learn. When subject matter to be acquired becomes too complex in sequence, failure as an end result tends to occur. If subject matter is too easy to attain, boredom on the part of students might well occur. It almost appears as if an optimal time is present for each student to acquire the new knowledge or skills, and yet be successful in ongoing endeavors to do so. Sequence in the curriculum then becomes a vital term in teaching-learning situations. Pertaining to sequence, Phenix[4] wrote:

> Since learning takes place over time, the materials of instruction have to be arranged in temporal sequence. Not everything can be studied at once; hence, decisions must be made about the order of instruction. How are these decisions to be made? What principles of sequence are available?
>
> It should be granted at once that to a degree the order of studies is arbitrary. There is no law of sequence that, if it were known, would prescribe exactly the succession of learning events. Education is in this respect like many of the affairs of ordinary life, in which the order of activities may be a matter of indifference. If one plans both to read a magazine and to run an errand, there may be no reason at all for doing one rather than the other first. Similarly, if it is decided that the curriculum is to include both music and painting, it may be a matter of indifference which comes first. It follows that, to some degree, accidental factors relating to historical traditions, personal inclinations, and available resources may properly be used to determine the sequence of studies and that many different, equally satisfactory orders can be devised.
>
> Granted this limited arbitrariness, it is still necessary to study the principles of sequence that govern a desirable curriculum. There are two kinds of sequence factors to be considered. One kind has to do with the psychological factors in learning, by which the order of studies is related to the order of human growth and development ... The other kind of sequence factors relate to the logic of what is to be learned...

A logical sequence might be emphasized in teaching-learning situations. With a logical sequence, the teacher orders objectives for

student attainment. From the simple to the increasingly more complex stresses a quality guideline to utilize in sequencing objectives in the curriculum. When arranging objectives in a logical sequence, the teacher determines, through examination and reason, which objective learners should attain first, followed in sequence by others. Teacher judgment is involved in making these decisions. Students basically have no input in making these decisions. Logic exists in the mind of the teacher, not students, in ascertaining the order of objectives for learner achievement.

Toward the other end of the curriculum, a psychological curriculum may be emphasized. With a psychological arranged order of objectives, the student is rather heavily involved in sequencing. Sequence resides within the student, not the teacher. The teacher is a guide and stimulator to encourage students to be active participants in determining the order of objectives. A humane learning environment for students is involved when these learners have a voice in selecting and ordering objectives. Students may then make choices and decisions. A student centered curriculum is involved when a psychological sequence is in evidence.

With a learning center philosophy of instruction, the student may select sequential tasks to complete. An adequate number of tasks at diverse centers are available so that the learner may omit those not possessing perceived purpose. The student is the chooser of tasks to complete, not the teacher. To plan the centers, the teacher may determine tasks with student input. A psychological curriculum is in evidence with students selecting sequential tasks.

Separate from a learning center philosophy, student-teacher planning of objectives, learning activities, and appraisal procedures may be emphasized. Through cooperative planning, the student orders his/her own experiences be it in the form of objectives, activities, or appraisal methods. Psychologically, the student sequences what will be learned within planning sessions.

Individualized reading may also stress a psycholgical curriculum. On any grade level and within any unit of study, the student selects sequential library books to read. A wide variety of books on different topics and reading levels needs to be in the offing. Learners need to have opportunities to select library books which are of personal interest and possess meaning. The teacher intervenes to choose a library book if the student is unable to make choices and decisions.

Within a psychological curriculum in individualized reading, the student may choose how he/she wishes to be evaluated, covering the subject matter read. A variety of techniques may be utilized for the student to reveal knowledge and skills acquired. Sequence in evaluation with a psychological curriculum resides within the learner. Pertaining to stages that students go through in moral development, as an example of sequence, Kohlberg[5] emphasized the following based on his research:

I. Preconventional level

> At this level, the child is responsive to cultural rules and labels of good and bad, right or wrong, but interprets these labels either in terms of the physical or the hedonistic consequences of action (punishment, reward, exchange of favors) or in terms of the physical power of those who enunciate the rules and labels.

II. Conventional level

> At this level, maintaining the expectations of the individual's family, group, or nation is perceived as valuable in its own right, regardless of immediate and obvious consequences. The attitude is not only one of conformity to personal expectations and social order, bot of loyalty to it, of actively maintaining, supporting, and justifying the order, and of identifying with the persons or group involved in it.

III. Postconventional, autonomous, or principled level

> At this level, there is a clear effort to define moral values and principles that have validity and application apart from the authority of the groups or persons holding these principles and apart from the individual's own identification with these groups.

Objectives in the Curriculum

When viewing clearly stated objectives, the educator may well know what will be taught to students in the class setting. Excessively broad goals with diverse vague interpretations may have little value in teaching learning situations. Vague goals could include to develop the rational person, the good citizen, the democratic person, and the knowledgeable being. No direction is provided the classroom teacher, with such vague statements in determining what to teach, be it knowledge, skills, or attitudes.

When objectives are clearly stated, they need not be written in measurable terms, as behaviorists would desire. Clearly stated ends may be written as either general objectives and/or measurably stated objectives. Too frequently, educators believe that a good objective is definitely stated in measurable terms only and contains an indicator. After instruction, the teacher may then measure if a student has or has not attained a measurably stated objective. With general objectives,

the teacher can also evaluate if a student is moving in the direction of goal attainment.

Measurably stated, also called behaviorally stated, objectives, are advocated in teaching-learning situations for a variety of reasons. Thus a teacher can be perfectly clear on what is to be taught when measurably stated objectives are emphasized in instruction. Guesswork is not involved in terms of what is to be taught. If an objective is truly stated in measurable terms, all viewers should be able to agree on which knowledge, skills, and attitudes will be taught.

If a teacher announces to students, prior to instruction, what they are to learn as a result of teaching, certainty is involved in the learner's mind as to what is to be achieved. The student then need not guess which facts, concepts, or generalizations are to be acquired.

Since the learning opportunities guide students in direct achievement of each measurably stated end, alignment of means to ends is then in evidence. After instruction, the teacher measures to ascertain if precise objectives have been attained by students. The test, if clearly written, should be valid in that the items therein relate directly to the measurable stated objectives. Alignment of tests to objectives is a must.

Lay people may wish to know how well students are achieving. Test results from each student can help to answer that question. Test results are in numerical terms so that parents and other interested adults can understand the achievement levels of students. Objective reporting of student achievement may then appear in the local newspaper, on radio, and on television. Comparisons may be made of last year's

achievement of students as compared to the present school year. This can be done by comparing a student's progress from the previous to the present school year. Or, for example, last year's fourth grade might be compared with the fourth grade of the present school year. Comparisons have been made state by state of student achievement on the Scholastic Aptitude Test (SAT). Making these kinds of comparisons has been called the "wall chart" to notice differences in attainment.

State mandated and/or district wide instructional management systems (IMS) also advocate and implement the utilization of measurably stated objectives. Both approaches stress a basics curriculum. Thus a common set of objectives is to be achieved by all students. No student may then select which objectives to achieve and which to omit. Common learnings (knowledge objectives) are available for all to attain. Slow learners may take more time to attain these objectives, as compared to average and talented learners. A core of objectives for all to attain does not discriminate among students as to some acquiring more sophisticated subject matter as compared to others, such as the slow learners. An essential body of knowledge has been selected which each and every student is to achieve.

General objectives were popular in teaching-learning situations during the 1970's and earlier. There still are educators who prefer the more open ended objectives, or general objectives as compared to the more restricted, structured measurably stated objectives. General objectives, clearly stated and with no indicators, state in a broader way what will be taught, such as to develop within the student an understanding of consequences of World War II. The general objective

the aftermath or results of World War II having been fought.

General objectives provide a teacher with more flexibility in interpreting an end as compared to that which is measurably stated and contains an indicator.

Pertaining to a taxonomy of educational objectives, Brubaker[6] wrote:

> One of the main benefits that has resulted from recognition of the three domains is integrated teaching and learning. That is, curriculum planners have recognized the importance of integrating thinking, feeling, and acting in the learning process. Attention has been given to the important role of feelings and physical movement in a person's learning. Previously these two dimensions of learning were often neglected in the interest of low level cognitive processes such as memorizing and recalling information (facts).
>
> The levels or grades within each domain of the taxonomy can be useful to the curriculum planner. For example, the adaptation of the Bloom taxonomyu shown in Table 2 can help the curriculum planner find the cognitive level of each question he asks. (You will note that higher levels of the taxonomy involve thinking processes at lower levels. For example, a Level 4 question involves thinking processes at Levels 1, 2, and 3.)

TABLE 2 Bloom Taxonomy

CATEGORY NAME	DESCRIPTION	TALLY COLUMN (PERCENT OF TOTAL QUESTIONS ASKED)
1. Memory	Student recalls or recognizes information.	
2. Translation	Student changes information into a different symbolic form or language.	
3. Interpretation	Student discovers relationships among facts, generalizations, definitions, values, and skills.	
4. Application	Student solves a life problem that requires the identification of the issue	

		and the selection and use of appropriate generalizations and skills.
5.	Analysis	Student solves a problem in the light of conscious knowledge of the parts and forms of thinking.
6.	Synthesis	Student solves a problem that requires original creative thinking.
7.	Evaluation	Student makes a judgment of good or bad, right or wrong, according to standards designated by students.

The challenge to the curriculum planner is clear: the level of question asked should be relative to the questioner's goals and objectives for asking the question. For example, if the curriculum planner as questioner needs specific information from a group, a memory question is appropriate. If "brainstorming" is used by the curriculum planner, higher level questions will elicit many and diverse anwsers for the group to consider.

Balance Among Objectives

In designing the curriculum, adequate emphasis needs to be placed upon diverse kinds of objectives and goals, be they measurable or general. Teachers, supervisors, and administrators need to evaluate which type of end -- knowledge, skills, or attitudes should receive major emphasis in teaching-learning situations.

There have been educators who largely stress students attain knowledge objectives. Thus learners are to attain an adequate number of vital facts, concepts, and generalizations. If higher cognitive objectives are emphasized, complex concepts and generalizations will be prized much more highly than factual content for student attainment. Skills objectives then need thorough implementation so that salient concepts and generalizations can be acquired. These skills include

critical thinking, creative thinking, and problem solving. When thinking critically, students separate facts from opinions, accurate from inaccurate statements, and fantasy from reality. Separating into component parts such as analyzing subject matter is involved in critical thinking. Creative thinking stresses hypothesizing, originality, uniqueness of ideas, as well as divergent thinking. Fluency of ideas and flexibility become key concepts in guiding students to think creatively. Problem solving emphasizes students identifying a problem which involves a perplexing situation. Uncertainty exists in the mind of the learner as to which path to follow when thinking of answers to a problem. An adequate amount of subject matter needs to be gathered from different reference sources in answer to the question.

Then too, there are educators who stress the importance of students developing well in the affective or attitudinal dimension. To achieve well in terms of attitudes, students need to have learning activities which are highly interesting, possess much purpose, and provide adequately for each learner. To have uninteresting classroom experiences, learning activities which lack purpose or reason, as well as experience opportunities to learn which are too complex or excessivley easy cannot assist students to attain well in the attitudinal development.

Students need to be heavily involved in choosing learning activities, from among alternatives. In this way each activity selected can be of interest, purpose, and provide for differences among students. Planning of activities by students with teacher guidance, not dictation, might well assist students to develop better attitudes.

A teacher determined curriculum consisting of objectives, learning activities, and appraisal procedures might not be of interest to students. Nor, do students perceive purpose or reason for learning under these situations, generally. Too frequently in a curriculum developed and implemented solely by the teacher, inadequate provision has been made for students of different achievement levels.

Selected educators may stress a balance among knowledge, skills, and attitudinal objectives. All three receive adequate emphasis. Perhaps, a balanced emphasis should be placed upon the three categories so that each receives adequate attention during teaching-learning situations.

Providing for Individual Differences

Each student differs from others in many ways. These differences include interests, abilities, purposes, and socio-economic levels. Students individually need to attain as much as possible. The classroom teacher needs to know and understand each learner well. As much information as possible should be secured about each student. The information should be utilized in a professional manner only, that being to do a better job of teaching. How might teachers provide for individual differences?

1. Experience cards listing possible activities to complete at each station should be written clearly. There are more activities at the diverse stations than any learner can complete. Activities are written on diverse levels of achievement. Those too difficult or too easy may be omitted by

students. Each learner picks sequential activities that are on his/her achievement level. Individual differences might then be provided for. The student may select committee or individual endeavors to work on from the diverse stations.

2. An agreement may be signed by the student and the teacher pertaining to which activities the former should complete. The student is largely responsible for determining the activities on the agreement form. Hopefully, each activity, be it committee or individual work, will assist students individually to attain optimally. The learner intrinsically needs to realize which tasks are too complex as well as too easy and should not be a part of the agreement. The purpose of the agreement is to guide each student to learn as much as possible.
3. With textbook use, a pretest can be written and given to students. From these test results, each student will be at a different place within the textbook. Thus for each learner, there is a starting point. He/she might then achieve sequentially from that starting point to provide for individual differences.
4. All students in a class may be taught together regardless of present achievement levels. No one then loses out on the more sophisticated knowledge. If tracking is stressed, the slow leearner does not receive the same information as compared to the fast learner. Those who were formerly judged to be limited in achievement may progress with the others in the classroom,

if the total class is taught as a unit. Mixed achievement levels, heterogeneously grouped, are then achieving and working together on diverse learning activities. Each student is ad usted to the curriculum, rather than adjusting the curriculum to the learner.

5. Homogeneous grouping may be used. Here, students are grouped according to their abilities so that homogeneity is involved. Thus, the top achievers are placed in one classroom, whereas the average achievers are placed in a separate room. Slow learners make for still another class of students in homogeneous grouping. In homogeneous grouping, the goal is to have students as uniform as possible in achievement within a classroom. The teacher may then have a better chance to provide for individual differences when the range of abilities within a classroom are lessened.

Pertaining to individual differences, Rubin[7] wrote:

> Intelligence can be defined as the ability to reason abstractly and to solve problems, but there seems to be no hard and fast way of measuring either intelligence or of predicting how well a child will do in school. There are, however, a number of factors that a teacher must recognize when concerned about the individual differences in children. One such factor is sex differences, particularly the differences between young boys and girls in growth and learning abilities. Another difference is in the home life of the child. In some homes more than one language is spoken, in others a dialect prevails. Also, the differences in the education of a student's parents, the socioeconomic class of the family, the neighborhood in which a student lives, and the composition of the family must be recognized as creating differences. Such factors should be taken into account if the teacher is to give each pupil the best possible education.
>
> Since research generalizations are often based on averages, we tend many times to talk of "average" children, but they don't really exist. It must be emphasized -- and

often -- that because of many variables that make the student separate and unique, with his or her special assets, liabilities, and needs.

Unit Teaching

Selected teachers use unit teaching, especially in the curriculum areas of social studies and science. The name unit means oneness or a unity. The emphasis in unit teaching is for students to perceive relationship of subject matter. The classroom teacher assists students to relate knowledge and skills. Positive attitudes also need developing so that learners attain knowledge and skills objectives more effectively.

The development of resource and teaching units stress unit teaching philosophy. In addition to the objectives sections, unit plans tend to stress a threefold strategy in teaching. To start a unit, initiating activities need to be in evidence. These activities establish interest and purpose within the unit to motivate learners. After the initiating experiences, developmental activities need to be in the offing. With developmental experiences, students engage in depth learning of content, abilities, and the affective domain. Meaning and understanding of content acquired is vital. Culminating activities follow the developmental experiences. To culminate a unit means to end it satisfactorily. Culminating activities emphasis review, practice, and, perhaps, some drill. Interest in the unit should remain high during the time given to the entire unit.

In each unit, a variety of learning activities needs to be in the offing. Reading as well as audio-visual materials should be utilized as

learning opportunities for students. There are activities in a unit that are appropriate for each ability and achievement level of students.

Toward the opposite end of the unit teaching continuum is the textbook approach. A single or multiple series of textbooks used in sequential grade levels could provide the majority of objectives students need to attain in terms of knowledge and skills. A few additional learning activities, such as selected audio-visual aids, could provide for variety of experiences and elaboration of subject matter contained in the basal text(s). Scope and sequence then basically reside within the textbook. The teacher needs to provide readiness, prior to students reading from these textbooks. Readiness experiences for students prior to reading silently might involve the teacher building background information directly related to what students will be reading, learners seeing the new words on the chalkboard and identifying each correctly, as well as being able to use words individually within sentences. Finally, prior to students engaging in reading, one or more purposes needed to be identified. Thus when students read silently, they will locate answers to these purposes or questions.

After the silent reading has been completed, a discussion may follow involving ideas gleaned.

Compared to unit teaching, basal textbook approaches of instruction are more structured and subject matter centered. Also, the abstract greatly overshadows concrete and semi-concrete experiences for students. Textbook approaches tend to be more formal and less open-ended and flexible. Objectives to be achieved focus largely upon a single

reference source rather than a multi-media approach. Less provision for individual learning styles is in evidence since reading is largely the learning activity utilized.

However, individual differences may be provided for by using either unit teaching or the textbook(s) approach by adjusting each activity to individual differences among students.

Pertaining to the writing of daily lesson plans, Reisman and Payne[8] wrote:

> There are many formats for writing lesson plans. Some instructors require students to specify everything: prepare long-term and short-term goals, translate these into detailed lists of objectives, set performance goals for each objective (pupil must get 80 percent of test items correct), describe procedures and materials to match each objective, schedule time for instruction, describe extended activities for reteaching, remediation, or enrichment, and set evaluation procedures. Objectives can become one-sentence paragraphs. To some extent, lesson plans in the detail required in pedagogy courses are not carried into the real world of teaching.

Grouping of Students for Instruction

Numerous means are available to group students in the classroom. Homogeneous grouping emphasizes placing a uniform set of learners in one classroom who have similar ability and achievement levels. Thus the gifted and talented would be taught in a separate room. The average achievers as well as slow learners would also be placed in separate classrooms for instructional purposes. Uniformity of achievement is then desired to teach a class of students. This cuts down on the range of achievement in a room as compared to mixed achievement levels of learners being in the same room. With less of a range in achievement,

the teacher can do more large group instruction in homogeneously grouped students.

Heterogeneously grouped students make for a wide range of attainment within any classroom. The slow, average, and fast students are all taught in the same room. Within the heterogeneously grouped students in a classroom the teacher could divide students into small groups such as a fast, average, and lower achievement levels for teaching purposes.

A different way of grouping learners for instruction would be the nongraded school. No grade levels exist here. Rather, students experience continuous progress. The gifted and talented are taught on a level where sequential progress is made with the sky being the limit. Average achievers too are taught where their starting point of academic achievement is, followed by optimal ordered progress. Slow learnes would also achieve as rapidly as possible; however, their abilities would not permit the rapid progress made by the gifted/talented, as well as the average achievers.

Team teaching can be utilized with both homogeneous and heterogeneous grouping. A team approach emphasizes two or more classroom teachers planning the objectives, learning activities, and evaluation procedures, cooperatively, for teaching a given set of students. Teachers on a team should be given time during the school day to plan instruction. Thus, built in inservice education is in evidence. Teachers might then learn from each other during planning sessions. Secretaries and aids should do the routine work of a team of teachers so the latter can utilize their professional time more wisely for planning

to teach students. One teacher of the team teaches in large group instruction. Whoever teaches in large group instruction, perhaps sixty to ninety students, may change off with other team members on a different day or days. After large group instruction, committee endeavors on the part of students is in evidence. Generally, five to eight students should be in each committee. All team members assist committees to clarify what was presented in the large group session. Additional activities and experiences also are pursued in these committees.

A third level of team teaching is individual study whereby each student with teacher guidance decides upon activities and experiences to pursue.

The philosophy of team teaching is quite different from the self-contained classroom whereby a single teacher plans for teaching students. The self-contained classroom teacher selects objectives, learning activities, and evaluation procedures in teaching a given set of students. There might well be no planning for instruction with other teachers. If the self-contained classroom teacher does minimal visiting with other teachers, opportunities here for inservice education diminish greatly.

A completely departmentalized plan of teaching usually is in evidence on the junior and senior high school levels. Each teacher plans for and teaches a specific academic area, such as history only, to a given set of students. The departmentalized teacher has completed a major in course work on the baccalaureate degree, or higher, in the academic area being taught on the junior or senior high school levels.

Departmentalization can also be emphasized on the intermediate grade levels of the elementary school. Departmentalization emphasizes a teacher teaching in his/her academic area of specialty.

Class length will generally be forty-five to fifty minutes for each session of teaching a specific classroom of students. This is followed, in sequence, by teaching other classes of students in the academic area of specialty. Thus, a departmentalized teacher may teach, for example, five or six sections of students with twenty-five in each class, during each school day. It is more difficult then to get to know (six sections times twenty-five in each class) 150 students taught as compared to the twenty-five learners in the classroom for the self-contained teacher in the classroom. Teachers need to know and understand each student well to do the best job of teaching possible. Information pertaining to each student should be utilized to assist learners on an individual basis to attain more optimally. It is more difficult to relate subject matter areas in departmentalization as compared to the self-contained classroom. Time schedules can also be more rigid and formal for departmentalization, as compared to team teaching.

Magnet schools have as their ultimate goal the integration of students from diverse racial groups. A magnet school, as a model, has more teaching materials, better trained/educated teachers, and facilities, as compared to the regular public schools. Students together with their parents elect, in large cities, whether or not the former is to attend a magnet school. Definite quotas exist in terms of numbers from each racial groups as to how many are accepted to attend a magnet school. Magnet schools are considered a substitute to busing of

minority students to achieve racial integration. As the name magnet indicates, students are to be attracted, as a magnet, to attend an educational institution. Thus the magnet school and its curriculum must be appealing to students and their parents.

Education by choice (EBC) was a concept salient in public schools during the 1970's. There are still selected schools emphasizing EBC. With EBC, the student and parents chose a selected type of curriculum for the former. Thus, on the elementary level for intermediate grade levels, the following types of curricula exists from which a choice could be made:

1. a basics curriculum which stressed the three R's (reading, writing, and arithmetic).
2. an activity centered curriculum whereby the different academic areas were learned within the framework of construction, art, excursions into the community, dramatization, and puppetry and marionette activities. Pupils were perceived to be active, not passive beings in teaching-learning situations.
3. nongraded schools whereby each pupil achieved as much as possible with no designated grade levels.
4. an integrated curriculum in which subject matter areas lost their boundaries and borders within the framework of problem solving activities.

Secondary students and their parents with education by choice could choose, from among the following alternatives:

1. the performing arts curriculum.
2. mathematics and computer science.

3. science, including physics and chemistry.

4. a foreign language curriculum.

Within each of the above named curricula, a general education emphasis would be in the offing.

The voucher system has been a rather recent approach in permitting parents and the student to select a school for the latter to attend. The student and parents may evaluate which school the learner is to attend. The school ultimately selected, of course, may bypass the local school. With student/parent selection, from among many alternatives, the best educational program, hopefully, will be chosen.

The money available for schooling from public funds can be used to attend the school of the students choice. Transportation costs will generally be the responsiblity of the parents. The voucher system can be compared with the market economy. In the market arena, individuals choose which products to buy. Popular products will survive on the market, whereas those goods and services not selling well will be eliminated due to buyers needs and demands. The same philosophy might then be applied to the public schools, those whose services are obtained through the voucher system will do well and expand. Where the demand for the services of a school are weak, the institution will either become better through inservice education or wither away. Either a weak school improves its teaching/educational services or it may no longer exist. With the market place philosophy, increased demand for a school's services of quality teaching will increase the supply of those institutions deemed to possess excellence.

In Summary

Numerous designs of the curriculum haved been discussed. These include:

1. separate subjects versus an integrated curriculum.
2. scope in the curriculum.
3. sequence in the curriculum.
4. measurably stated versus general objectives.
5. balance among knowledge, skills, and attitudinal objectives.
6. provision for individual abilities among students.
7. unit teaching procedures.
8. diverse means of grouping students for instruction.

Numerous philosophies were discussed pertaining to each of the above designs in developing the curriculum.

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